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Computer Pro welcomes letters from our readers, so please feel free to write us at: editor@computerpro.ca or by mail and to: Letters to the Editor, Computer Pro, Suite 254, 425 Central St., Vancouver BC, Canada V6B 6C3.

First of all, for those who still use DOS, our DOS package will have to live at 604-592-6666. So please write. We'd love to hear from you. Please be aware that letters may be edited for brevity and clarity. There are a couple of letters from readers of our first issue.

Depth of coverage appreciated

Thanks for your issue of Computer Pro. I have waited for the depth of coverage about computers you are providing. As a Computer Coach and teacher, I need the kind of approach you advocate. So thanks for your publication. I look forward to your next issue.

Stephen (aka known as nety-head@nety.ca)

See Editor reply:

Thanks Stephen, we're glad to hear that our approach resonated with you. We believe there is room in the market for a publication that recognizes computer

enthusiasts and professionals at its lay audience - and doesn't talk down to them. We want to provide readers with depth and clarity on the issues that we cover - without being gratuitously confusing.

Taking a note and baring approach

I just wanted to let you know how much I enjoyed your first edition. And what a great time to appear! I don't do reviews on DVDs or talking phones - I just want a COMPUTER page!

I spent 20 years as a professional programmer, mostly on mainframes programming in Assembly and PLI and then using DOS on PCs, etc. I ditched Windows, but realize that I must use it to survive in today's world. However, I still use many batch programs and my regular e-mail program is DOS (SLAMM) as my office OS/2 and I still use Telex to connect to my favourite BBS.

So you can see why I am so excited

about your statement of direction for your new publication. At last, a print & Web approach to solving problems at the desktop level.

For a future edition I have a suggestion on a topic: How about analyzing different Perl/Java and Auto/Visual packages? This would include their initial cost and also how much you have to fork out each year to keep getting updates. You might mention that AVG has a completely FREE version that will satisfy all but the most demanding users.

And don't forget to mention P-Prot which runs under Windows as a DOS box and it is also completely FREE. I have been using P-Prot for about 20 years. You might want to mention those AW programs that no longer open (Norton and Macro!) that everything gets mangled (along with you) on how to speed things up if you must on using either of those products) in your opinion:

1. There is no better firewall than ZoneAlarm for the average user (and I'm first)
2. If I had to know why Norton refers users to AVG when it encounters certain viruses...
3. Don't know which one they say?
4. Why do anti-virus programs (AVG, Norton, etc.) that check e-mails for viruses only work if you use Outlook 5.0 (Default Express)? I use Mozilla

(Message 74) and I am sure there are many people using Outlook, etc. Maybe it's because Outlook Express has so many holes or that it is the only one that needs monitoring for viruses.

I am really looking forward to your next edition and keep up the good work! - Bob Sharpman

See Editor reply:

Thanks, Bob. You raise a number of great points and you can be assured that we will continue to provide on-going coverage of virus-related topics as they are very much on the minds of our readers at the moment. In addition, I think that a comparative piece on firewalls is an excellent idea. In terms of anti-virus packages, we did provide some coverage of this in our fourth edition - and we do plan further coverage (on the issues story in Norton Internet Security and Symantec's new anti-malware application) in this and further issues. It is also interesting that you mention performance issues as discussing Norton Anti-Virus (NAV) as this was one of the key points that Symantec's own researchers discussed with us in recent interviews I did with them about the product. They said that a key goal in the latest edition of NAV was to ensure that they supported system performance when NAV was running.

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News Special – Coverage of Intel Developer Forum

Intel put its best and brightest new product ideas and technologies on show in San Jose last month and the following are a selection of major stories and announcements from the event – an event which clearly shows the way that the world's largest processor manufacturer wants to take the entire industry. It provides some strong clues as to the kinds of systems that we can expect from Intel-based hardware manufacturers over the coming year.

Convergence and communications are this year's buzzwords for Intel

You see I want to see the converging convergence of computing and communications. At least that's the view of Intel Corporation President and Chief Operating Officer Paul Otellini, who led the Intel Developer Forum (IDF) Fall 2003 conference at San Jose's Moscone Convention Center that he will work to make that goal of convergence a reality.

"Just two years after declaring details on what was then condensed Broadband, the convergence of computing and communications has gone mainstream," he said. "As one example the addition of more than 70,000 wireless networking nodes a day to the world's computing infrastructure makes it clear that convergence is here today. And this isn't just happening in the PC area – we're estimating by 2008 there will be more than 2.5 billion wireless, handheld devices capable of providing communications functions combined with the processing power of today's advanced PCs."

Otetellini's comments were made during his opening address, during which he also described the new Intel technologies that he said will "provide end-user benefits that go beyond" processor frequency. "It was two years ago IDF that we committed to deliver fundamental technologies to deliver greater productivity and better experiences for computer users" he said. "We said we would continue to lead in microprocessor performance and we've done that. We also said we needed to create technology specifically inspired to match the ways individuals use computing and communications devices. Hyper-Threading technology, with its innovative approach to enhancing the computing experience – and Intel Celeron mobile technology, which delivers breakthroughs in mobile computing, are the first outcomes of this effort."

He pledged that the company will continue to deliver on its promise to provide greater user benefits by supplying technologies to improve security, reliability and media processing, among others. In the security area, Otellini pledged that the company's LaGrande technology would be designed as a future end-to-end solution to Intel processors, chipsets and platforms and that, when combined with optimized software, it would protect against software-based attacks on computer systems. He predicted that this



Last month speaking about Intel's commitment to convergence

technology could be available in the next two to three years.

"At a time when the 'noise' of the work station is playing in all, making our computing devices more secure through the addition of hardware-based security must become a top priority for the industry in order to ensure future growth," added Otellini. "However, it's important to do this in a way that also respects the privacy rights of individuals. Intel is committed to achieving both goals."

He also said that, in the future, Intel plans to enable multiple independent software environments to be used in a single PC – similar to the way many fire alarm systems operate. Code-named "Blackfield," it is aimed at "improving the end user experience by increasing system reliability, flexibility and responsiveness, as well as speeding the ability to recover from computer crashes." He further promised that the company is also developing similar enhancements to improve the processing of digital media – boosting the performance and lowering the cost of experiencing advanced digital media capabilities. This feature is expected to become increasingly important in the home environment – and should give Intel further momentum against Apple's new OS, which has typically rated the technological high ground in this area.

Otetellini also said that he would use his company's "leadership in silicon technology" as a foundation for providing "benefits beyond processor speed. He said that advanced silicon technology will allow Intel to meet customer requirements by "packing even more new features and functions onto smaller and smaller devices." For example, Otellini predicted that by 2011 the company plan to be building

microprocessors with extremely 22-nm scale with transistors smaller than a single DNA molecule. As an example of Intel's commitment to technology leadership, Otellini made the first public presentation of an Intel silicon wafer built in the next generation 65 nm manufacturing process.

"Intel is committed to bringing technologies to market that end users want and can use today," said Otellini. "We will offer technologies such as Hyper-Threading for performance, enhanced security to enable true mobile computing, LaGrande for security, Vpro for improved reliability, flexibility and the overall computing experience, along with our core silicon expertise which underpins our ability to enable these and other capabilities."

He said that in large corporations, convergence will create new opportunities to wireless users up into desktop and other applications on the Internet. Prohibit highlights from Intel in the enterprise computing area include plans to introduce a dual core Intel Xeon processor MP (code-named Tualari) and a

multi-core Intel Itanium processor (code-named Tanglewood) among other technologies in the mobile area. Otellini said that Intel is focused on common software that can run across multiple platforms to enable a seamless computing-communications experience.

Intel offers its vision for the digital home

Meanwhile it was left to Loren Berez, vice president and regional manager of Intel's Desktop Platform Group to outline why Intel believes that the digital home is becoming a reality with new products, technologies and services that move the industry closer to the goal of enabling consumers to enjoy content anywhere, anytime and on any device at home. He also presented new products, product designs and technologies for the digital home, which he said would encourage the "computing, consumer electronics and entertainment industries to jointly make products easier available to consumers in the next step in delivering a true digital home experience."

He also demonstrated consumer products that are available today or will be in the near future. This included a high-definition video camera running on a previously announced desktop processor the Intel Pentium 4 processor Extreme Edition 3.20 GHz supporting Hyper-Threading Technology – with an additional 2 Mbytes of cache. Berez said this new processor will be targeted at high-end gamers and computing power users.

"The industry has made great progress toward developing interoperability guidelines as well as innovative products and services that are helping make the digital home a reality for consumers," Berez said. "The next step in the digital home is enabling the availability of premium content on the home network, giving consumers access to the type of compelling content they want to enjoy. We're committed to continue to work with the consumer electronics, music and film industries to deliver the capability which, in turn, will create new business opportunities for all."

He said that several new and innovative products will provide consumers with a great experience in the digital home. One way, for example, will soon make available what is called the "LCD Media Center," which will serve



Intel President Paul Otellini

Continued on page 13

Windows Server 2003: Part 2

By Greg Whithright



So you're considering upgrading from Windows NT to Windows Server 2003. Or at least Microsoft is hoping you are. If you're a little unclear about why you might want to make this investment in time and energy, we offer the following "Top 10 Reasons" list from Microsoft as to why you might want to make this move – and our own thoughts on the relevance of these items.

1 Active Directory Microsoft says its Active Directory service can "simplify the administration of complex network structures," and suggests that it should make it easy for users to locate resources such as shared drives, printers and so on, as well as even large networks. Microsoft also makes a big deal of it being suitable being "built from the ground up using Internet standard technologies" – and fully integrated at the operating-system level in Windows Server 2003, Standard Edition, Windows Server 2003, Enterprise Edition and Windows Server 2003, Datacenter Edition. The improvements that you'll see in Windows Server also include cross-domain trust, the ability to secure domains, and the ability to discover attributes and classes in the schema (so that these definitions can be changed).

2 Group Policy Group Policy Management Console – OK, the story here is that administrators can use Group Policy to define the settings and allowed actions for users and computers. In contrast with local policy, they can use this Group Policy to set policies that apply across a given site, domain, or organizational unit in Active Directory. Policy-based management simplifies what takes an system update operation, application installation, user profiles and desktop-system lockdown. Microsoft says that the Group Policy Management Console (GPMC) is expected to be available as an add-on component to Windows Server 2003 – and it provides the new framework for managing Group Policy. With GPMC, Group Policy can become much easier to use – something that should enable some organizations to better use Active Directory and take advantage of its management features.

3 Server Performance – Microsoft boasts that at internal tests, Windows Server 2003 shows dramatic performance gains over previous versions of Windows server operating systems. Will, only the company would be as big mouthful of it data. I said you wouldn't even consider upgrading! Slightly concerned about this, Microsoft says that file and Web server performance is twice as fast as Windows NT Server 4.0.

4 Volume Shadow Copy Service – This is another enhanced backup

feature. As part of Volume Shadow Copy service, it is supposed to enable administrators to implement point-in-time copies of critical data volumes without service interruption. These copies can then be used for server restoration, archival purposes, or restoration. The idea is that users should be able to retrieve archived versions of data documents that are currently maintained on the server.

5 Internet Information Services (IIS) 6.0 and the Microsoft .NET Framework – IIS 6.0 is part of Microsoft's ongoing campaign to win the hearts and minds of Web hosting and administration departments and provides heavy support for Web applications and XML. Web services (which is no big surprise, given that Microsoft Office 2003 is all based around XML). In addition to its critics IIS 6.0 has been completely overhauled with a new fast-release process model that greatly boosts the reliability of Web sites and applications. Now, IIS can apparently handle an individual Web application or multiple sites into a well contained process (called an application pool) that communicates directly with the operating system kernel. This feature is supposed to increase throughput and capacity of applications while offering some "breakdown" on servers, which Microsoft says should effectively reduce business needs. These self contained application pools are supposed to prevent one application or user from disrupting the XML Web services or other Web applications on the server.

IIS also provides "health monitoring capabilities, to discover, recover and prevent Web application failures. On

Windows Server 2003, Microsoft ASP.NET actively uses the new .NET process model. These application "tasks and decision frames" are also supposed to be available to existing applications running under Internet Information Server 4.0 and IIS 5.0, with the vast majority of applications not needing any modifications.

6 Terminal Services – Microsoft has designed Terminal Server to fit seamlessly between Windows-based applications, or the Windows desktop itself to virtually any computing device – including those that connect via Windows. When users run an application on Terminal Server, the application execution takes place on the server, and only keyboard, mouse, and display information is transmitted over the network. Users see only their own individual session, which are managed transparently, by the server operating system, and remain independent of any other client screen.

Meanwhile, Remote Desktop for Administrators builds on the remote administration mode of Windows 2000 Terminal Services. In addition to the two major sessions that are available in Windows 2000 Terminal Services server administration mode, an administrator can also remotely connect to the host console of a server.

7 Clustering (High Node Support) – Microsoft is really making this available only in Windows Server 2003, Enterprise Edition and Windows Server 2003, Datacenter Edition. It is supposed to provide high availability and "scalability" for big data, mission critical applications such as databases, messaging systems, and file and print

services. Clustering works by enabling multiple servers (nodes) to serve as consistent connections. If one of the nodes in a cluster becomes unavailable as a result of failure or maintenance, another node immediately begins providing service, a process known as failover. Users who are accessing the service continue their activities, unaware that service is now being provided from a different server (node). Both Windows Server 2003, Enterprise Edition and Windows Server 2003, Datacenter Edition support server cluster configurations of up to eight nodes.

8 Integrated PKI Support Using Windows Server 5, Using Certificate Services and certificate management tools, your organization can deploy its own public key infrastructure (PKI). With PKI, administrators can implement standards-based technologies such as smart card login capabilities, client authentication through Secure Sockets Layer and Transport Layer Security, secure e-mail, digital signatures, and secure connectivity using Internet Protocol security (IPsec). Using Certificate Services, administrators can set up and manage certification authorities that issue and revoke X.509 V3 certificates. This means that you don't have to depend on commercial client authentication services, although commercial client authentication can be integrated into an organization's public key infrastructure. Windows version 5 of certificate is a somewhat mature, industry-standard network authentication protocol. With Windows version 5 support, a fast, single-logon process gives users the access they need to corporate resources, as well as to other environments that support this protocol. Support for Kerberos version 5 includes additional benefits, such as mutual authentication (client and server use both provide authentication) and delegated authentication (the user's credentials are passed on to end).

9 Command Line Management – No need for a GUI? Windows Server 2003 provides a better command-line infrastructure, letting administrators perform most management tasks without using a graphical user interface. Of special importance is the ability to perform a wide range of tasks by executing the information more easily by Windows Management Instrumentation (WMI). This WMI command-line (WMIC) feature provides a simple command-line interface that incorporates built-in scripting shells and utility commands and can be easily extended by scripts or other administration-oriented applications.

Clearly, there's a lot of competing with

Continued on page 22

as an all-in-one digital entertainment device. Borne said that Intel and Gateway have worked together to make a music center which is powered by an Intel Pentium 4 Processor with HT Technology (a technology that Intel says will allow consumers to simultaneously run multiple programs more smoothly and efficiently). For example, Borne said that consumers can record their favorite TV show in the background while playing a 3D game in the foreground.

Intel also introduced the Intel 815 Digital Set Top Box Business Design, which Borne said will deliver "a flexible platform that will allow OEMs to fast time-to-market solutions for a fast growing IP-video on demand market segment today, serving both digital homes, as well as the hospitality industry." He said the design allows service providers to add further content services as they develop these market segments such as music over IP and residential gateway/voice portal. The design can also be tailored for applications such as networked digital media resources and personal video recording. Products based on the Intel design are available from Wyse Technology.

To help make it all a little more real for conference attendees, Intel showed a "two-generation" digital media ecosystem (DMAE) - which are devices that can seamlessly transfer personal digital video, photos and music from a PC to a TV and a music listening DMAE system (e.g., Play2TV and Listen2's Media Link). As well, Borne said the first live demonstration of Intel Express HD graphics - which represents the next generation HD standard that will be available to consumers from graphics vendors in 2004.

For those interested in building their own PCs, you may note the Intel announced the Intel Atom Technology Embedded (ITE) from Intel's specifications, formerly code-named "SoC Nuclei." Intel says that the new SoC Nuclei "enables the next generation of PC system designs, and is expected to supersede the Atom family of

motherboard form factors over time." The company adds that ITEC will enable the industry to "enable a better balance in thermal management, system size and shape, accuracy, and performance... all critical attributes to economic desktop PCs for the digital home." ITEC apparently supports individual desktop users and enables industry specifications based around Intel Atom PCs.

Wireless was also a big part of plans for the home. Borne previewed a new technology that he says will be available from Intel in mid-2004, and will help to simplify home networking by including a wireless access point and router functionality as an embedded feature of the PC to help minimize the need for external equipment or cables to build a small home network. Also in the future is an Intel instant on/off technology that he says will allow consumers to power the "on" button and "the PC is ready in a few seconds." If a PC using this technology loses power, Intel says that a quickly recoverable "without losing data or allowing the PC under normal operation." Intel says plans to include this technology on platforms in the near few years.

Intel is also wading into the copyright entertainment content debate with a strategy for sharing protected content between devices. Borne says that companies across the computing, CE and entertainment industries believe that Digital Transmision Content Protection (DTCP) over IP, a content management technology co-developed by Intel, Hitachi, Toshiba, Sony and Matsushita (Panasonic), is the way to accomplish that. He explained that DTCP over IP enables digital premium entertainment content to be delivered between digital home products over wired and wireless networks. The DTCP over IP specification version 1.0 is now available at www.dtcp.com.

Finally, Intel said that in order to accelerate new product development (in the digital home ecosystem), it is providing a comprehensive "DHP technology" or Universal Plug and Play. These tools and further details can be found on the Intel Developer Network for the digital home on Intel's developer Web site at <http://dev.intel.com>.

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Word 2003 - Microsoft says that in response to customer feedback, Word 2003 offers new features to make documents easier to create, share and read. For example, the review and markup features have been improved to make it easier to track changes and manage comments (something that I've always found somewhat painful in Word). Word 2003 also supports XML as a file format and can thus serve as a fully functional XML editor. In addition, you can use Word 2003 to save and open XML files.

Excel 2003 - Excel 2003 also includes support for XML and lots of new analysis tools (such as the comparison tools). Those who share spreadsheets will particularly like the ability to define a portion of a spreadsheet as a list and then export it to a Microsoft Windows Shared Services Web site. Smart tags in Excel 2003 are also apparently more flexible than in Office XP.

Outlook 2003 - Outlook just keeps on getting better and better. Throughout the six months that I've been using it, I've found Outlook 2003 helps me get to my most important email a lot faster - and helps me do a much better job of

sorting through the email that I don't want. It offers a new clustered mode, automatic grouping of messages, junk email handling, and improved reading views.

PowerPoint 2003 - The major improvements here are to the user interface and support for Smart tags. Microsoft has also improved rich-media support in PowerPoint 2003 - making it simpler to save PowerPoint 2003 files to a CD, and better integration with Microsoft Windows Media Player means that you can play a variety of streaming audio and video within a slide show.

Access 2003 - Here again, the focus seems to have been on making it easier to use and organizing the ability to import, export, and work with XML data files. Microsoft has also tried to make Access 2003 a little more "proof proof" by identifying and flagging common errors for you - and thus showing you the options you need to correct them. You do also get help in designing data bases with a new feature also that helps you identify object dependencies.

Publisher 2003 - Microsoft's Web site creation and management program at made fantastically more powerful by the ability to incorporate XML from all the other Office applications.

OneNote 2003 - This is

kind of odd - a note-taking and management program that lets you to capture, organize and reuse written or typed notes on a laptop or desktop computer or a Tablet PC. The idea behind OneNote 2003 is that it gives you one place to capture multiple forms of information - including typed and handwritten notes, hand-drawn diagrams, audio recordings, photos, and pictures from the Web and information from other programs. The major problem with all these forms of information typically lies in organizing them so that you can use them. OneNote can help provide that.

Publisher 2003 - It's back. After an uneasy, off-synch relationship with Office Publisher is now back in the Office fold. You can use it to create materials for print e-mail, and the Web using the same user interface as other Microsoft "Office System" programs - and integrate materials from them.

Project 2003 - The same is true of Microsoft Office Project 2003, which is once again in the Office family - despite being part of a family of its own. There's Microsoft Office Project Standard 2003, Microsoft Office Project Professional 2003, and Microsoft Office Project Server 2003. Microsoft says that Project Professional 2003 and Project Server 2003 work together to provide a



powerful Enterprise Project Management (EPM) solution that enables organizations to align business objectives, projects, and resources for better business results. Unfortunately you need a large and complex organization to really test this in an effective fashion, but Microsoft says the new version's "flexible reporting and analysis capabilities".

Visio 2003 - Although Visio is a pretty comprehensive business and technical diagramming program, it is generally best known for being the first time my client couldn't find on the planet. I can still do that, but Microsoft also pledges that it can now also "improve your decision-making process, build consensus across the organization, enhance communication, and make a more professional-looking report on your audience." Maybe I'll just stick to using it for Org charts. [Info-Pub 2003] - This is called an



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190MHz \$1055
240MHz \$1125

Code 101

Model 20 Entry P4

74 MHz Pentium
Onboard Video/ISA
15MB CD-ROM
Back 14.4Kbps Modem
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive

170MHz \$1180
190MHz \$1210
240MHz \$1280

Code 201

Model Tower Entry P4

74 MHz Pentium
Onboard Video/ISA
15MB CD-ROM
Back 14.4Kbps Modem
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive

170MHz \$1180
190MHz \$1210
240MHz \$1280

Code T1

Model 40 Entry P4

74 MHz Pentium
Onboard Video/ISA
15MB CD-ROM
Back 14.4Kbps Modem
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive

170MHz \$1630
190MHz \$1700
240MHz \$1770

Code 401

Model 18 ATA Xeon

74 MHz Xeon processor
Onboard Video/ISA
15MB CD-ROM
Back 14.4Kbps Modem
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive

2x Xeon
240MHz \$1480
240MHz \$1530
240MHz \$1580
240MHz \$1630
240MHz \$1680
240MHz \$1730

Code 102

Model 20 SCSI RAID Xeon

74 MHz Xeon processor
Onboard Video/ISA
15MB CD-ROM
Back 14.4Kbps Modem
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive

2x Xeon
240MHz \$1530
240MHz \$1580
240MHz \$1630
240MHz \$1680
240MHz \$1730
240MHz \$1780

Code 202

Model Tower ATA Xeon

74 MHz Xeon processor
Onboard Video/ISA
15MB CD-ROM
Back 14.4Kbps Modem
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive

2x Xeon
240MHz \$1530
240MHz \$1580
240MHz \$1630
240MHz \$1680
240MHz \$1730
240MHz \$1780

Code T2

Model 40 ATA Xeon

74 MHz Xeon processor
Onboard Video/ISA
15MB CD-ROM
Back 14.4Kbps Modem
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive

2x Xeon
240MHz \$1630
240MHz \$1700
240MHz \$1770
240MHz \$1840
240MHz \$1910
240MHz \$1980

Code 402

Model 18 SCSI Xeon

74 MHz Xeon processor
Onboard Video/ISA
15MB CD-ROM
Back 14.4Kbps Modem
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive

2x Xeon
240MHz \$1475
240MHz \$1525
240MHz \$1575
240MHz \$1625
240MHz \$1675
240MHz \$1725

Code 103

Model 20 SCSI Xeon

74 MHz Xeon processor
Onboard Video/ISA
15MB CD-ROM
Back 14.4Kbps Modem
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive

2x Xeon
240MHz \$1525
240MHz \$1575
240MHz \$1625
240MHz \$1675
240MHz \$1725
240MHz \$1775

Code 203

Model Tower SCSI Xeon

74 MHz Xeon processor
Onboard Video/ISA
15MB CD-ROM
Back 14.4Kbps Modem
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive

2x Xeon
240MHz \$1525
240MHz \$1575
240MHz \$1625
240MHz \$1675
240MHz \$1725
240MHz \$1775

Code T3

Model 40 SCSI Xeon

74 MHz Xeon processor
Onboard Video/ISA
15MB CD-ROM
Back 14.4Kbps Modem
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive

2x Xeon
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240MHz \$1700
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Code 403

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Back 14.4Kbps Modem
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive

2x Xeon
240MHz \$1725
240MHz \$1775
240MHz \$1825
240MHz \$1875
240MHz \$1925
240MHz \$1975

Code T4

Model 40 Dual Xeon

74 MHz Xeon processor
Onboard Video/ISA
15MB CD-ROM
Back 14.4Kbps Modem
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive

2x Xeon
240MHz \$1725
240MHz \$1775
240MHz \$1825
240MHz \$1875
240MHz \$1925
240MHz \$1975

Code 404

Model 40 Dual Xeon

74 MHz Xeon processor
Onboard Video/ISA
15MB CD-ROM
Back 14.4Kbps Modem
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
Back 15MB CD-ROM Drive
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Upgrading your Computer for Capacity and Performance Without Bursting your Budget

By Geoff Whelan/argyle

Upgrading computers should be a lot easier than it is. Unfortunately, there are far too many "you can't get there from here" problems involved in taking an existing desktop computer and making it more powerful by simply adding new components to it.

At the core of this challenge is the fact that computers age incredibly quickly — far more quickly than almost any other kind of device. The systems you buy today will almost certainly be commercially unavailable by the time next year. And even if there is a model that is similar, the motherboard, components and internal design may have evolved considerably.

In the computer industry, there are no systems like the Volkswagen Beetle (a World War II vintage design that lasted with few changes until very recently) or the faithful London taxi (an automobile design with nearly stopping power). For the most part, that has been good news for consumers — it has meant that every year there has been a fresh



supply of faster, higher-capacity systems that were more capable than those produced in the year prior.

None of this is to say, however, that there aren't system components that have a longer life. Keyboard, mouse and display, for example, haven't changed that much over the past five or six years. A monitor that you bought a few years ago is still likely to work with your upgraded PC — and the only difference between most keyboards sold today and those available a few years ago lies in the use of USB as the increasingly preferred method of connecting them.

What Do You Want To Do?

Having said all of that, anyone seriously considering a system upgrade really needs to start by asking the same question as anyone looking for a new system: what do you want to use it for? As longtime computer professionals as colleagues, we very much are asking ourselves that question when we start down an upgrade path — but all too often we try to focus on the details without

looking at the whole picture.

We say, for example, focus on the idea of upgrading a system from Windows 2000 to Windows XP — and upgrading the capacity of the hard disk to support that change. Unfortunately, of course, that would ignore the issues of whether or not the system being upgraded had the processing power and RAM to efficiently exploit the features in Windows XP.

So in that discussion, you really need to do things back one level and ask yourself what you expect to accomplish by upgrading to XP. It may be that your real goal is that you want something faster, more stable, more fun to use and more well supported than you have right now — and installing Windows XP may be the solution to meeting that goal.

But if you don't look at your real needs comprehensively, you could end up in a situation where the system is less stable (because it's constantly crashing), no more XP's minimum requirements, but well supported (because XP allows

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Apple's G5: Multimedia Power Tower

By Graham Smith



Introduction

I tell you the greatest pleasure of having a brand-new Apple Power Mac G5 has supplied courtesy of Simply Computing, had on my desk in early Sept., just days after the engineers began to ship in Canada. Since opening up the box and setting up the computer, I've been running the new G5 through its paces. Here are the results of these hands-on tests.

Out of the Box

If you've never opened up an Apple computer before, it really is quite a treat compared to most PCs. Apple often takes heat for shipping too much for its computers, but when you crack open the latest package (which, it now takes 37 pounds, it also amazingly heavy, compared to most PCs), you can understand why Apple computers receive fireworks of designers, critics and heavy critics — the attention to detail is truly impressive.

The first thing you see is a poster-sized cardboard replica of the aluminum side panel of the G5 tower, showing the internal case bottom optical drive, keyboard, DVD to VGA adapter and (optional-designed) power cable. Everything here, save the power cable, is pure white — there's also a pure white phone cord and USB extender cable, complete with translucent clips to help reduce cable clutter and protect the metal connectors.

Inside another layer of Styrofoam reveals the G5 tower itself, wrapped in a soft white packing material. Unwrapping it I marveled at the sheer size of the unit — standing more than 20 inches tall, this unit looks positively huge next to most other computers including Apple's previous tower-line towers. The all-aluminum profile

and pattern on the front and back of the case allows glimpses of the fans and other components to be seen through the front panel, under certain lighting conditions. I've heard some Mac critics complain of when I suggest we're probably face of the company's new-discontinued line of easily-colored products) characteristic of case as bland, but I appreciate its rather stark, synthetic. Undoubtedly, to most buyers of luxury cars, clothes or jewelry there is class.

It's when you take the side panel off and gaze upon the insides of the G5 that the true depth of Apple's obsession with design becomes evident — there's hardly a wire to be seen and the layout and finish of everything is positively artistic. A clear plastic side panel is included underneath the aluminum siding, allowing the unit to be run with the metal panel installed. It seems a shame

to hide this beauty under a cloth.

I examined the one-button mouse to one of the USB 1.1 ports on the backside of the rather minimalist keyboard that ships with the G5 along with an Ethernet cable, hooked up the power and monitor, and pressed the silver power button on the unit's front panel. A few seconds after hearing the familiar Apple startup chime sound, I was greeted with the "Welcome" screen that welcomes new Mac owners to the setup wizard that leads to the Mac OS X desktop and the powerful Unix-based operating system of this computer. (That you can boot out of the seemingly exclusive operating system by pressing Command-Q.)

My test unit was the 1.6 GHz model: 1.6 GHz and dual-CPU 2 GHz models are also available. Here's a brief summary of the 1.6 GHz model's specs (see www.apple.com for more detailed descriptions):

- 1.6GHz PowerPC G5 (5433) PowerPC 970 processor
- 500 MHz front-side bus
- Up to 8GB of DDR-400 SDRAM (512MB standard)
- 36GB Serial ATA hard drive (two maximum)
- NVIDIA GeForce FX 5200 Ultra 64MB AGP x8 Pro with DVI and ADC connectors
- Three 3.5-inch floppy expansion slots
- Three USB 2.0 ports, two USB 1.1 ports on keyboard
- One FireWire 800, two FireWire 400 ports
- Bluetooth & AirPort Extreme ready
- Optical and analog audio in and out
- 56K modem
- SuperDrive (no Power DVD-R)
- "iMac style" white keyboard and mouse

Connect:

If you're a benchmark wackler be advised, the fastest dual-processor G5 may be found by Apple as the world's fastest personal computer,* but it still comes in second place to a dual Xeon-equipped Dell Precision 530 PC running Windows or Photoshop and Lightroom 3D rendering benchmarks. (See <http://www.apple.com/apple/02/041612141300.asp> for details.) The G5's performance in video encoding tasks, however, is nothing short of spectacular. Digital video, it would seem, is the killer app for the G5.

The default graphics card is the 1.6 and 1.8 GHz G5 model appears to be primarily a cost-cutting measure by Apple. I'm inclined to agree with the Sept. 30 headline by MacRDP that, at this point in the evolution of the personal computer, NVIDIA's 5200 just does not have enough "bang" to recommend. It's associated spending \$75 more for a RADEON 9600 or, if ultimate 3D performance is overvalued,



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There are a few other design decisions deserving mention that's only a typical Apple design, but none for only one internal hard drive, but there are probably a side effect of Apple's efforts to carefully manage the internal thermal characteristics of the machine. Both issues are easily addressable with external add-ons.

Transferring Data

I connected my old Mac — a dual 1.25 GHz G4 desktop — to the G5 via a FireWire cable (not included) and held down the "I" key as I powered on the G4. Its screen displayed a FireWire Target Disk mode had been activated. Within seconds, its hard drive appeared on the G5's desktop as a secondary drive. I backed up the "User" directory and several of the third-party applications I'd previously installed on that machine. Transfer rates were speedy — the G4's 40-Mbps FireWire port is just as fast as the G5's FireWire 800 port for Gigabit Ethernet, for that matter) allowed, but it still took less than half an hour to transfer more than 16GB of data to the new machine, with a minimum of fuss.

During this procedure, I discovered one little hole of the G5 I haven't seen mentioned. However, it interested me, so let me say that — a welcome change from the robust metal levels of the G4 models some call the "Widowmaker" Mac. What's interesting though is the way the G5's fan behaved when I repeated (specifically for setup purposes) the FireWire Target Disk mode setup using the G4 as the target disk. After activating the mode by releasing the G5 with the "I" key held, I noticed that the fans gradually became louder and louder. The unknown noise level increased steadily as more and more air was whisked out the large holes on the backside of the machine. Soak, paper, and candles pinned to my wall were

then a minor issue were fluttering as if in a windstorm. At this point, I ran out of the room to show the bizarre phenomenon to my colleagues who were as amazed as I was to how the FireWire mode changes the machine into a real hot burner!

Software

The G5 comes with Apple's iLife suite, including iPhoto 2, iMovie 3, iTunes 4 and iDVD 3. The iDVD application alone weighs in at 1.6GB in size. These are consumer-oriented apps, so be sure, but they're certainly not lightweight! These "apps" have been discussed at length by many other reviewers, so I'll focus instead on my primary interest in this machine, as a platform for running professional audio, video and publishing applications.

Audio

Apple (much to the chagrin of lawyers representing the Beatles' Apple Corp.) has built powerful music and audio capabilities into the G5. A pair of "Digital" output SPDIF (Sony/Philips digital interface) output ports on the back are complemented by coaxial, and optical ports on the back, and on the front of the case are USB and FireWire 400 ports and a headphone jack. There is no Apple speaker jack for the Apple Pro speakers supported by other Macs.

A closer examination of the

TiSonic Digital HD ports on the G5 suggest that there will still be a market for third-party Surround Sound cards. As detailed in an article entitled G5 Surround Sound: Fire Link Hardware at www.mactalk.com/content.php?id=112_9_1_0_C, the G5 has no onboard surround decoding. Thus, you'll only get unprocessed audio out of a G5 if you plug it into a receiver with Dolby decoding, or spooler like the new Logitech Z600.

I've recently been working with Apple's Soundtrack, a \$399 audio mixing program similar to Pro, as first written by some of the same people responsible for some Pro tools. And for Windows, I've worked with Sonic Pro's program on PCs for years and am delighted to report that the program's logic is fully compatible with Soundtrack. I'd certainly put it on my short list of "must have" audio programs for the Mac, along with other great programs now available for Mac OS X. Proprietary Reason, ReaLogic for, if you prefer, the recently announced Cubase SX 3.0, Ableton Live 3.0 and Steinberg's Logic 6.3.1. Incidentally, it is on a currently short list of programs already optimized for the G5.

Users of Pro Tools and other PCI card-based audio or video subsystems should be careful to ensure that all cards used on the G5 are compatible with the updated 3.3 slot PCI standard, DMI 2

and 3-volt cards — including several models in the Pro Tools lineup — won't work, and Digidesign says Power Mac G5 models are currently NOT supported by any of its products. See www.digidesign.com/compatibility/g5 for details.

Video

Pro videographers are likely to be very interested in the new G5, given the strong selection of Mac-based video software and the extensive graphics placed on the hardware and OS by high-quality video. While I'm not digging into my tests of Apple's Final Cut Pro 4 (which, by the way, includes the Soundtrack program I mentioned above) and Final Cut Express on the G5, early indications are extremely encouraging. Video encoding performance, as mentioned earlier, is blindingly fast — it's possible to export video from iMovie (using the "CD ROM" setting) with better-than-real-time performance — a 23-second clip took only 21 seconds to encode and save. Video buffer spending times, such as those on a regular basis will find that a G5 will quickly pay for itself, in terms of time saved.

There are only a few potential snags. Xpress DV from Apple doesn't currently support the G5, and a few PCI-based capture cards don't work with the new 3.3 slot, as mentioned above. That is, as in the case, most of the cards moving to the G5 — per se, not in the blocking edge. With that said, video is the area I'd name as the G5's strongest suit. The G5's processing muscle is put to good use by the demands of video transcoding and effects processing.

And the G5's blazing-fast processor is put to good use in other video-related areas, such as MPEG 2 encoding — an essential aspect of DVD content creation. I was not a fan of Apple's iDVD Studio Pro 1.x, but the new 2.0 release (at half the price!) is a huge improvement.

All the G5 models I've seen so far include the Power Mac DVD-R drive — amazingly, this mechanism is capable of writing to DVD-RW media, but Apple doesn't support these features



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Continued from page 22

are less likely to be victim for our-doubt hardware) and slower (because the limited processing power in the older system is being swallowed by just running the operating system — never mind any applications).

You may, in fact, want to add a little more memory and hard disk capacity and stay with your current operating system — if slightly better performance and reliability is all that you're looking for. If, on the other hand, you know that there are lots of new applications that you want to use (including those bundled with XP) and you need better hardware to do so, you'll need to seriously consider a major upgrade or replacing your system.

Look at ALL the Costs

It would be very easy to say that in most cases, it is going to be easier to simply head down to your favorite computer dealer and buy a completely new system. You know that all the

components will work well together, the latest version of Windows is likely to come bundled with the system — and you'll have a warranty on it.

But that would be over-simplifying things. Once you've figured out what you hope to accomplish by upgrading your system, it is important to look at ALL the costs of doing the upgrade so that it will do what you want.

Let's try it with a few typical upgrade options using prices advertised in the last issue of Computer Pro. Let's say your target upgrade system is a Dell Dimension system with a 300 MHz Intel Pentium III processor, 128 MB of memory and a 6 Gb hard drive (here with me on the spec, this is just a theoretical case). And the system is currently running Windows 98 and streaming badly because the hard disk always seems to be full — and you have no easy way to back it up.

And let's say your goal is this: before it is to get the machine running Windows XP Home Edition and have enough space left over that is going to run Microsoft Office and a suite of

development tools without choking. And you want to be able to back up your work to CDs. On the basis of these needs, here's what a typical price list might look like (figures are from published dealer prices in Computer Pro) in order to do the upgrade.

\$136.98 — 128 Gb Seagate Barracuda 7200 hard drive from NCIX
\$85 — 256 MB of 133 MHz SDRAM memory from ICI Computers
\$35 — 10 CD-RW drive from A-Power
\$125 — Windows XP Home Edition from PowerQuest
\$498.94 — Total

Now that's not a bad price — as long as everything works well together and you don't run into any major problems in installation. But consider that many of these same components will actually sell you a whole new system with a faster CPU for only a few hundred dollars more.

If you know what you're doing — and you probably do — then it may well be worth going with the upgrade. But if you don't, then you would end up spending a lot more money to get the old system up and running effectively than you have budgeted for.

Of course, these prices only cover upgrading the hardware and operating system. If you are also looking at upgrading applications, then the whole proposition becomes even more difficult. Many new systems, for example, will "bundle" applications (such as WordPerfect or Microsoft Works) — which you won't get as part of an upgrade.

Consider All Your Options

Don't give up easily on upgrades, however, as you are probably better placed to make the most of an upgrade than the average consumer. As an

enthusiast — and likely a computer professional — you work with technology every day and can bring a level of expertise to the upgrade scenario that most consumers couldn't dream of doing (at least not without paying a steep hourly rate to someone like you). So you can leverage that.

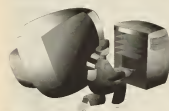
You could even use that expertise to build your own system. With the vast array of motherboards, cases, storage, power supplies and memory available from hard dealers, you don't have to feel bound by the constraints of whatever the world's major PC manufacturers think should be in your PC. By buying your own parts and building your own system, you may actually create a far more interesting option for yourself than either upgrading or buying a new PC.

Ensure that It All Works Together

Whether buying or upgrading, however, make sure that you make sensible choices about the combination of hardware and software that you bring together. Just as it wouldn't make a lot of sense to put a huge hard drive into a six-year-old system in order to do an XP upgrade (because the processor performance would be so poor that it would cancel out most of the performance and capacity benefits of the huge hard drive), it also wouldn't make sense to crank up the RAM capacity or replace the processor (which is really only an option for certain systems) without also looking at hard disk capacity.

If you are, in effect, going to redesign your system, you need to think like a system designer and make sure that what you are designing is going to hold together.

Happy Upgrading! ■



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Towers, rack mounts and RAIDS

By Computer Pro Staff

So you want to buy a server. Well, there are a number of ways that you can go — from a straightforward strategy of taking an existing desktop computer and tacking it onto a server by simply changing its hard drive and power (which is a reasonable way of approaching this task in a home environment) — or the more conventional task of buying a tower, rack-mounted or “blade” server (which is a component of what you might use in a larger corporate server environment).

We'll assume for now that as a computer consultant or professional you are reasonably familiar with how to simply share a drive or a printer on a home network and we'll concentrate on the more interesting questions of whether to go with a tower system or take the leap into the rack-mounted world (blade servers, which they are a great concept, probably deserve a whole piece on their own and we may get to that sometime in the near future).

If your server needs an modest — not you budget — it also right — a tower-style server will probably be OK. You'll want to make sure that it has the faster (or possible) processor you can afford, as much memory as you can put into it, the largest possible hard drives — and some form of “mirroring” (so that backing-up copies of what you save on one level disk are also “mirrored” on another instance of disk failure).

It's RAID.

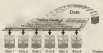
If you really want to modernize how best to configure disk arrays in a server, you'll need to consider disk “arrays” that conform to the RAID (Redundant Array of Independent Disks) standard. The California-based RedPeb Group of California offers a great explanation of RAID on its Website at <http://www.speidgroup.com/> explaining that RAID was an acronym first used in a 1983 paper by Berkeley researchers David Patterson, Garth Gibson and Randy Katz. It described array configuration and applications for multiple independent hard disks (like Redundant Arrays of Inexpensive Disks) providing fault tolerance (error-detection) and improved access rates.

The company then goes on to explain that servers should use RAID because it provides a method of accessing multiple

redundant disks as if the array were one large disk — spreading data across out over these multiple disks thereby reducing the risk of losing all data in one drive fails, and improving access rate.

Typically RAID is used in large file servers, transaction or application servers, where data accessibility is critical and fault tolerance is required. RAID is also being used in desktop systems for CAD, multimedia editing and playback where higher transfer rates are needed. What is really useful is RedPeb's explanation of RAID Levels. RAID 0: Also known as “Disk Striping”, this is technically not a RAID level since it provides no fault tolerance. RAID 1: Written in blocks across multiple drives, so one drive can be writing or reading a block while the next is looking for the next block.

RAID Level 0 • Disk Striping • High-IO Performance



The advantages of striping, as the higher access rate and full utilization of the array capacity. The disadvantage is there is no fault tolerance — if one drive fails the entire contents of the array become inaccessible.

RAID 1: Known as “Disk Mirroring” provides redundancy by fully duplicating every data to all other drives in the array. If one drive fails, the other contains exact duplicate of the data and the RAID can switch to using the same drive with no impact in user accessibility. The disadvantages of mirroring are no improvement in data

access speed, and capacity is low. However it provides the best protection of data since the array management software will simply direct all application requests to the surviving disk members when a member of disk fails.

RAID 2: RAID level 3 stripes data across multiple drives, with an additional drive dedicated to parity, for error correction & recovery.

RAID Level 2 • Paralleled Transfer Data with Parity • High Data Reliability & Highest Transfer Capacity



RAID 3: RAID level 5 is the most popular configuration providing striping as well as parity for error recovery. In RAID 5 the parity block is distributed among the drives of array giving a more balanced access load across the drives. The parity information is used to recover data if one drive fails, and this method is the most popular. The disadvantage is a relatively slow write cycle (2 reads and 2 writes are required for each block written). The array capacity is $N-1$, with a maximum of 3 drives required.

RAID Level 5 • Independent Access Array with Rotating Parity • High Data Reliability & Flexible Capacity



RAID 6: This is striping and mirroring combined, without parity. The advantages are fast data access (like RAID 0) and single —

drive fault tolerance (like RAID 1). RAID 6-1 will require twice the number of disks.

But we digress. The point of all this is that tower servers are generally best when you have tightly defined needs and won't need to be changing the specification of your server a lot over its lifetime.

On the Rack

Rack-mounted servers are really the way to go, however, if you want flexibility and expansion. And they really don't have to break your bank account. Here at Computer Pro for example, we recently spent several weeks working with the Novell 30 SCSI Intel-Xeon based tower system supplied by Richardson-based City Computer.

The 5015 Novell came standard with the Intel Xeon/2 server board, could take two Intel Xeon 2.6 GHz processors, came standard with two 36 GB 10K SCSI drives that support RAID 5 (and a third was added for \$375 and is included in the above price), 1 GB of RAM — as well as two 500 watt redundant power supplies, the Intel 2U microserver server chassis and the ability to supporting “hot swapping.”

The ability to “hot swap” components such as power supplies and drives, the inclusion of a number of safety features within the rack-mount configurations, made it feel like a real rugged BMW being sold for the price of a low-end sports car.

The real issue behind servers like this is that they offer you the opportunity to really make the most of operating systems platforms such as Microsoft Windows Server 2003 (see Part 2 of our series on it in its time) or the latest versions of Linux. If you can point server software on under-powered hardware, you won't be in a position to gain the benefit of that.

And if you want to be flexible to go to a point where you can really enjoy the kinds of “fibre” or “cable” —

style was designed for the home market available from a commercial vendor. Unlike the arcade shells offered by X-Arcade and Siskit, these are fully configured systems complete with monitor and computer. A Viewsonic C900 17" SVGA, 16-bit monitor, a computer using an Intel Celeron 2.30GHz CPU, and an Altec Lansing sound system. They are truly commercial-quality systems.

The ArcadePC Ultra is the "babe" arcade system, which comes with a 17" monitor, and the Deluxe model sports a 21" monitor. The Ultra is a relatively small unit at 23" wide by 32" deep, 66" tall and weighing in at 200lbs. The Deluxe model is considerably heavier than the Ultra model, measuring 28 1/2" wide, 45" deep and 74" tall and weighing 150lbs heavier than the Ultra model. It also provides more buttons and controls with a trackball. Like the Ultra model, the Mega-control unit uses a 17"

monitor and directly uses two two-foot sets of buttons and joystick controls as input to play both horizontally and vertically playing video games. It measures 29 1/2" wide by 35" deep, is 29" tall and weighs 200lbs. This unit also has a hard glass top - perfect for placing a glass of your favorite drink on top of it without fear - and it's designed to be that the rest is stable even when your floor is crooked. Optional operating cards are also available for the Ultra, and all of the ArcadePC games come with a package of 30 licensed Capcom Game ROMs.

You can expect to pay top dollar for these systems. The ArcadePC Ultra and Mega sell for \$3,999.95, and the ArcadePC Deluxe goes for \$4,999.95 U.S. They are all very slick systems, and if you are looking to simply buy a complete system capable of running MAME out-of-the-box and you have the space, cash, these systems are worth checking out.

Siskit's Arcade Pin Units (www.Siskit.com)

If you know you want to go with a multi-player system and want controls that the X-Arcade units don't offer, then the products Siskit offers are worth a look.

There must have been control to the Fighter Unit, a two-player arrangement designed specifically for players who love the fighting

game. Like X-Arcade's and Hasaile two-player models it comes with a joystick and 8 buttons for each player with 6 buttons arranged in two rows, and 1 joystick - the typical arrangement for fighting games. It comes with an 8-way programmable button, designed primarily to help you pause the game while playing. The other big difference is the increased responsiveness at 32" wide at 21" vertically wider - and hence more available elbow-room - than the 34" wide two-player units the other manufacturers offer.

The next step up - and what a step - is the Chase Unit, which features all of the controls and buttons of the Fighter Unit plus an additional eight programmable buttons - with an opening for additional four buttons placed on the sides, perfect style - as well as a joystick, joystick, trackball and quarter control arranged in the center of the board. This is a well thought-out arrangement, perfect for the vast majority of arcade games. The addition of a four-way joystick is perfect for playing older games like Pac Man that only allowed for up/down/left/right play. Standard joystick allow for 8-ways of movement, which can make the advanced game play, as an excellent digital movement with "combat" these games, resulting in a wider player - who usually becomes a dead player - a second later. An excellent board for all-around gaming.

Siskit's C90 Unit is designed for games that require two joysticks per player, like Twin, Shadow or Smash TV. It is exactly the same arrangement as the Chase Unit but with the additional joystick. What's more, the second joystick comes equipped with a fire button on top, so you can cut it to a simple fire-and-fight system.

If you want the multi-player play for such classic games as Gorf, Kungur or Xanadu, and a two-player arrangement isn't enough, then Siskit offers a Quad Unit, which contains standard controls for up to four players. It contains all of the standard controls of the previous two units, plus additional individual player controls and track buttons. It is also considerably wider at 48", and the players are angled at 45 degrees to each other, providing more than adequate elbow-room for all four players.

Finally, Siskit also has their own fully-fledged arcade bar unit, which contains a number of key differences from the X-Arcade version. Like the X-Arcade version what you get is essentially a pre-made arcade bar unit as has been more depth, and it's less likely to tip. It also has more simply designed for a roomier setting with side monitor mounting, with specifically designed for use with a Wide Gamarc arcade monitor. Unlike the X-Arcade

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Chapter One - A Good Story

By Geoff Weinbacht

I didn't really think much would come of it, I panicked quite badly, really, and I wasn't sure there was much of a story. Stories have been my life for the past 25 years - ever since I decided as a teenager that I was going to try and make a living as a journalist.

And in the years leading up to that day in February 1999 I had done a pretty good job of it. I'd written about a dozen books, written many hundreds of magazine and newspaper articles, published my own magazine for a time, helped launch dozens of other people's magazines, and even had a chance to act as a ghost writer of a monthly magazine column for Bill Gates.

Anyway, when I got a call from an old high school classmate asking me to come and listen to the CEO of a Vancouver-based, high technology company he was promoting, I really wasn't expecting much.

My old high school buddy, Charles Desjardins, was doing "internet relations" work for a company devoted to producing software for the moving industry and I thought there was a vague chance I might be able to get a story out of it for one of my regular newspaper clients, the National Post in Canada and the Financial Times in the United Kingdom. And I thought it might be fun to see Charles again.

It wasn't immediately apparent to me just how important this meeting was going to be. It would literally change my life, and I have yet to figure out whether the events since then changed it for the better or worse. The evening with the software company was successful enough and gave me enough to write a

story for my newspaper clients, but the really eventful moment came afterwards.

Charles and I went for coffee to catch up on things. It was then that he told me about his own new venture, something called *Internet.com*, and I started to listen very hard. His story was a gut buster; it was so hard to believe.

Charles and his business partner Doug McNeil were in the business of providing website relations services for small public companies - many of which were in the moving sector. It's a tough, ugly and very risky job as I later came to realize, but I suppose somebody has to do it.

But I digress. The fantastic part of this story began when Charles and Doug came to be asked to take over the operation of one of the company's they had been working with - Wintry Ventures - which had been a coffee company, a bad manufacturing company, had tried to become a technology company and in early 1999 was supposed to be a moving company.

During the latter half of its troubled public company, it had acquired a domain name on the World Wide Web and made plans to launch a Web site called *Internet.com* - only to be denied the right to change its business by the Vancouver Stock Exchange. Perhaps showing considerable foresight and remarkably predictable caution, the exchange declared the request on the basis that it saw no real possibility of creating a viable business around the domain name.

Fast forward a year or so when the company falls into the control of Charles

and Doug, who then proceeded to clean up the dirt taken on by its previous management and move forward with plans to make it a viable moving company. At least they were doing so until one day in February 1999 when Charles was told one CEO of Wintry Ventures, received an email offering the company \$400,000 to buy the Internet.com domain name.

Being someone of the details of the company's previous failed foray into technology, Charles initially thought it was Internet junk and - since not of "get rich quick" stuff - he didn't do anything about it. It was a Friday afternoon and he wanted to get home to his wife and young children - and so he left the office.

When he returned on Monday, Doug had taken a closer look at the email. And he had also done some digging through the company's records. What he discovered was shocking. Yes, Wintry Ventures had indeed sold the domain name *Internet.com* and yes, the \$400,000 offer was legitimate.

With this revelation, Charles and Doug quickly understood that their business and their lives were going to change. Charles got the domain name in play and began to field all kinds of offers including a verbal offer from a major American brokerage for up to \$5 million.

It was shortly after this that I had my final meeting with Charles and he told me the story. This was a far more interesting story than the moving software company he had just taken me to that year. And it got me thinking - hard.

I had been writing about technology and watching it from the sidelines

since 1981 when I bought my first personal computer. During that time I had met and worked with every legendary computer industry person. I had watched people such as Bill Gates, Allen Osborne (founder of Osborne Computers), John Sculley (former CEO of Apple Computers), Ben Rosen (chairman of Compaq Computer and early investor in Compaq Lotus Development, Electronic Arts, Amiga Software and many other companies) and Michael Dell (founder of Dell Computers) create huge and amazing companies from nothing but a good idea, a modest amount of investment and strong management.

I had interviewed each of these players in the early days of their careers and yet always stayed clear and removed from the companies themselves. Even though I had the chance to do so, I never invested my money in these companies, always believing that the stock market was a sucker's game designed for gamblers in paragonized suits.

And yet here, in the face of my old high school science lab partner Charles Desjardins, was someone who looked to me like he just might be on the threshold of the kind of technology-driven greatness I had seen up-close and personal to many times before. My first instinct was to do a story about Charles and his good fortune. I talked about it to the National Post where my editor and I agreed that I should write it - and it would run in a technology supplement due out in this third week of June.

Then, however, was an ordinary story. It was a story that left me with a

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feeling that I wanted to be part of it—in a way that I had not felt for a very long time. I know a lot about technology. I knew a lot about online publishing, having worked closely with Microsoft in creating a blended online and print magazine in 1995 and 1996. And I knew, more than anything else, that I was living in a time that was very special—and that if I didn't move quickly, I would probably never see the best of me.

In addition to my regular newspaper and magazine work, I was trying to get a small company of my own off the ground at the time. It was called Wintz of Way Media and was designed to help companies create everything from customer testimonial stories to corporate video scripts to keynote speeches. But in the weeks following my meeting with Charles, I thought long and hard about the Web - and how I could use the creative and technology company across the world Web society.

Working with my own business partners, we came up with the idea for a site called Highchairsfor.com and registered the domain name to go along with it. It was highly marginal and rarely borrowed upon heavily from the investment.com idea - but registered that domain name left me feeling that I was going to get in the game, that I was not going to be easily a chameleon and change yet again. I wanted to be a doctor to have an impact and to make a difference. And so, like everything else I wanted to see just doing it.

We worked hard on the idea, talked to a few people who might think about investing in such a project and even developed a modest business plan for the Web site—which was going to be aimed at a niche providing information about high-tech public companies in Canada.

Meanwhile, my friend Charles has finally struck a deal with his dream man. He was going to have the operations of an ailing, moderately well-known Canadian financial Web site—called *Stockhouse Media Corporation*—take a stake in his company and provide the services necessary to create a successful *online Web site* and run it as a

In the pursuit of doing research I am spending time at the National Park, I met with Charles and his two partners at Stockholm. We sat on the beach, up and coming part of Vancouver called Ylanowit. It was full of old wooden houses and brick buildings that were slowly being converted into funky offices for sustainable high tech companies and the building conference of interest started that were writing out into the world.

The Internet stage had already started to wait for Charles' surprise. Since announcing the deal with Smithsonian, trade in Victory Vamps stock had been heated while in Missouri, Rick Friedman's company

the deal it was widely anticipated that the stock would shoot up quickly when it returned to trading.

Miramax's Stockholm Media Corporation was not so quietly letting the world know that it would soon announce a major new acquisition of its own: *Chicago News Media*, which was the Internet arm of Conrad Black's vast media empire. At that time it included Canada's largest daily newspaper chain, the recently-launched *National Post* newspaper, the *UK's Daily Telegraph* and a host of other titles around the world.

Victory Vendors soon resumed trading - and shot from pennies a share to around the \$1.40 mark. Lots of people made lots of money and I just shook my head in wonder.

Naturally to me, I became increasingly convinced that the opportunity we were offered represented a real, viable business in the middle of all this chaos. And yet I wasn't totally ready to give up on my other business - Write of Way - and so I split my time between Glen Kozminski and my wife Yvonne. Sieroski's diligently worked on business plans and opportunities, marketing opportunities to build the newspaper. We even worked with some friends on a plan to launch MyLifeShare.com on a shoestring budget - and aggressively looked for investors for that project.

The whole thing resulted a few years after June of 1979, when his and mine date to head off to Toronto on business trip to assist with potential claims for the Works of Way corporation, commodity business. But a fancy thing happened on the way to Toronto. The week before we were due to leave, Charles called me to check on when an article about when his investment company would be coming out in the National Post. I told him it was due at that point. He told me to call him after I appeared. I read pre-read thought notes were about it.

And then two days before we were due to leave, I had lunch with Charlie and he made The Offer: It was the last of either you dream about—a health insurance consulting firm, 200,000 stock options at 65 cents a share and the promise of Vice President of Corporate Development in a company that he suggested would have millions of dollars in growth over the next five

I told Charles that I would need to think about it, and that I would like to have a business partner but to be part of the project as the manager of no outside operations. Ian and I then set off a timeline measure of why we were taking the business trip and what our lives would be like when we returned.

This is an excerpt from an upcoming book by Computer Pro Editor G. Wherwight about his experience in the derivatives world. Next month: *Chaos Theory: Go Big or Go Home!*

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- 40GB IDE Hard Drive 7200 RPM Hard Drive
- Serial CD/DVD-ROM, 3.5" floppy drive
- *Monitor not included. System not a PC case.

PC Builder AMD Value
Athlon® XP 2000+ based systems

\$430

- Athlon® XP 2000+ Processor
- Integrated graphics, sound and LAN
- PC2700 DDR SDRAM
- 256MB SDRAM PC2700 DDR SDRAM
- 40GB IDE Hard Drive 7200 RPM Hard Drive
- Serial CD/DVD-ROM

PC Builder AMD Performance
Athlon® XP 2500+ systems

\$657

- Athlon® XP 2500+ Processor
- Select GeForce 4 MX440 Video Card with 64MB
- Intel® 800P01 Motherboard w/ Sound & LAN
- 256MB SDRAM PC2700 DDR SDRAM
- 40GB IDE Hard Drive 7200 RPM Hard Drive
- Serial CD/DVD-ROM, 3.5" floppy drive

PC Builder AMD Extreme
Athlon® XP 2500+ systems

\$1022

- Athlon® XP 2500+ Processor
- ATI Radeon 9000 Pro w/ 128MB RAM
- Intel® 800P01 Motherboard w/ Sound & LAN
- 512MB SDRAM PC2700 DDR SDRAM
- 40GB IDE Hard Drive 7200 RPM Hard Drive
- Serial CD/DVD-ROM, Afterburner 3.0 software

nCIX PC Entra 2000
AMD Athlon® XP 2500+ Computer

\$799.95 (street)

- AMD Athlon® XP 2500+ with 256MB Cache & 1MB L2 Cache
- Integrated Video, Sound, and LAN
- 256MB SDRAM PC2700 DDR SDRAM
- 40GB IDE Hard Drive 7200 RPM Hard Drive
- Serial CD/DVD-ROM, 3.5" floppy drive
- *Monitor & system not included

PC Builder Gamer's Value
Intel® Pentium® 4 Celeron based value systems

\$676

- Intel® Pentium® 4 Celeron
- Select GeForce 4 MX440 Video Card with 64MB
- Intel® 800P01 Motherboard w/ Sound & LAN
- 256MB SDRAM PC2700 DDR SDRAM
- 40GB IDE Hard Drive 7200 RPM Hard Drive
- Serial CD/DVD-ROM

PC Builder Gamer's Extreme
Pentium® 4 2.66 GHz Systems

\$1599

- Intel® Pentium® 4 2.66 GHz Celeron
- ATI Radeon 9000 Pro w/ 128MB RAM
- Intel® 800P01 Motherboard w/ Sound & LAN
- 512MB SDRAM PC2700 DDR SDRAM
- 40GB IDE Hard Drive 7200 RPM Hard Drive
- Serial CD/DVD-ROM, Afterburner 3.0 software

PC Builder SYSTEM X
Pentium® 4 3.0 GHz Systems

\$2857

- Intel® Pentium® 4 3.0 GHz Celeron
- ATI Radeon 9000 Pro w/ 128MB RAM
- Intel® 800P01 Motherboard w/ Sound & LAN
- 512MB SDRAM PC2700 DDR SDRAM
- 40GB IDE Hard Drive 7200 RPM Hard Drive
- Serial CD/DVD-ROM, Afterburner 3.0 software

Acer Notebook PC
T1020000 1.3GHz Celeron Processor

\$1785

- Intel® Celeron Mobile Processor, Pentium® M 1.3GHz Processor
- 256MB SDRAM, 10GB Hard Drive, DVD-ROM
- 11" TFT LCD screen, Windows XP Home